

10/529108

JC17 Rec'd PCT/PTO 24 MAR 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application: Please cancel claims 1-82, and add new claims 83 -

Listing of Claims:

1-82 (Canceled)

83. (New) A stent assembly comprising:

an expandable stent having a length and having a first end portion, a second end portion and a central portion disposed between said first and second end portions with said first end portion, said second end portion and said central portion defining a longitudinal axis along the length of said stent;

said first end portion having a first lattice structure when the stent is expanded;

said second end portion having a second lattice structure when the stent is expanded; and

wherein said first and second lattice structures are different.

84. (New) The stent assembly of claim 83 wherein:

said first lattice structure comprises a circumferential array of M first end crowns; and

said second lattice structure comprises a circumferential array of N second end crowns.

85. (New) The stent assembly of claim 84 wherein said

central portion comprises a third lattice structure; and

wherein said third lattice structure is substantially similar to said first lattice structure.

86. (New) The stent assembly of claim 84 wherein central portion comprises a third lattice structure; and

wherein said third lattice structure is substantially similar to said second lattice structure.

87. (New) The stent assembly of claim 84 wherein M is greater than N.

88. (New) The stent assembly of claim 84 wherein N is greater than M.

89. (New) The stent assembly of claim 84 wherein:

said first lattice structure comprises a first circumferentially undulating pattern with a plurality of first strut segments wherein said circumferential array of M first end crowns is formed between adjacent first strut segments with said first undulating pattern having a first amplitude;

said second lattice structure comprises a second circumferentially undulating pattern with a plurality of second strut segments wherein said circumferential array of N second end crowns is formed between adjacent second strut segments with said second undulating pattern having a second amplitude; and

wherein said first and second amplitudes are different.

90. (New) The stent assembly of claim 84, wherein:

said first lattice structure comprises a circumferentially undulating pattern with a plurality of strut segments wherein said circumferential array of M first end crowns is formed between adjacent converging strut segments; and

at least one of said first end crowns comprises a curvilinear bulb-shaped member extending longitudinally and circumferentially from respective ends of two converging strut segments.

91. (New) The stent assembly of claim 90 wherein each of said first end crowns comprises a curvilinear bulb-shaped member extending longitudinally and circumferentially from respective ends of two adjacent converging strut segments.

92. (New) The stent assembly of claim 84, wherein in a radially expanded condition:

    said circumferential array of M first end crowns have a first inter-crown distance between facings sides of adjacent first end crowns;

    said circumferential array of N second end crowns have a second inter-crown distance between facings sides of adjacent second end crowns; and

    wherein said first and said second inter-crown distances are different.

93. (New) The stent assembly of claim 83, wherein said stent assembly is adapted to be delivered to a location in a lumen and further comprising:

    a bioactive agent coupled to the stent assembly;

    said first end portion adapted to be the proximal end portion of said stent assembly;

    said second end portion adapted to be the distal portion of said stent assembly; and

    wherein said first end portion is adapted to deliver a therapeutic dose of the bioactive agent over a denser pattern to tissue at said location of said lumen than said second end portion.

94. (New) A stent assembly for implanting at least two stents at a location within a lumen, comprising:

first and second delivery systems each having a proximal end and a distal end that is adapted to be positioned at a location within a lumen;

first and second stents each with a first end portion, a second end portion and a central portion disposed between said first and second end portions;

said first end portion, said second end portion and said central portion defining a longitudinal axis along the length of each of said stents;

each of said first end portions having a lattice structure that is different than a lattice structure along the corresponding central portion and also different than a lattice structure along the corresponding second end portion;

said first stent is mounted on the distal end of said first delivery system with said first end portion located proximally of said second end portion;

said second stent is mounted on the distal end of said second delivery system with said first end portion located distally of said second end portion;

each of said first and second stents having a radially collapsed condition for delivery to said location;

wherein at said location each of the said first and second stents are adjustable from the respective radially collapsed condition to a radially expanded condition.

95. (New) The stent assembly of claim 94 wherein:

said first lattice structure comprises a first circumferentially undulating pattern with a plurality of first strut segments wherein said circumferential array of M first end crowns is formed between adjacent first strut segments with said first undulating pattern having a first amplitude;

said second lattice structure comprises a second circumferentially undulating pattern with a plurality of second strut segments wherein said circumferential array of N

second end crowns is formed between adjacent second strut segments with said second undulating pattern having a second amplitude; and

wherein said first and second amplitudes are different.

96. (New) The stent assembly of claim 94 further comprising:

a bioactive agent in association with said first and said second stent;

said respective first end portions are adapted to elute said bioactive agent according to a first elution profile;

said respective second end portions are adapted to elute said bioactive agent according to a second elution profile;

said respective central portions are adapted to elute said bioactive agent according to a third elution profile; and

wherein said first elution profile is substantially less than either the second or third elution profile.

97. (New) The stent assembly of claim 94, wherein in the radially expanded condition at said location the respective first ends of the first and second stents confront one another such that the respective confronting first ends overlap one another at an overlap region.

98. (New) The stent assembly of claim 97, further comprising:

a bioactive agent in association with said first and said second stent such that said bioactive agent is eluted with an elution profile at the overlap region that is substantially less than double an elution profile along the respective second and central portions of the first and second stents.

99. (New) A stent assembly comprising:

a stent having a length and having a first end portion, a second end portion and a central portion disposed between said first and second end portions with said first end portion, said second end portion and said central portion defining a longitudinal axis along the length of said stent;

a bioactive agent coupled to said stent;

a first elution profile along that portion of the longitudinal axis defined by the first end portion;

a second elution profile along that portion of the longitudinal axis defined by the second end portion;

a third elution profile along that portion of the longitudinal axis defined by the central portion; and

wherein the first elution profile is greater than the third elution profile thereby the stent exhibits a gradient of elution profile with respect to the bioactive agent along the length of the stent.

100. (New) The stent assembly according to claim 99, further comprising:

said first end portion having a circumferential array of first end crowns; and

one or more enlargements on said first end crowns.

101. (New) The stent assembly according to claim 100, wherein said enlargements are partially circular bulb-shaped enlargements extending from said first end crowns in a longitudinal direction away from said central portion.

102. (New) The stent assembly according to claim 100, wherein said enlargements are partially circular bulb-shaped enlargements extending from said first end crowns in a longitudinal direction toward said central portion.

103. (New) The stent assembly according to claim 99 wherein:

    said first end portion has a first scaffolding pattern;

    said second end portion has a second scaffolding pattern;

    said central portion has a third scaffolding pattern; and

    wherein said first scaffolding pattern is denser than said third scaffolding pattern.

104. (New) The stent assembly according to claim 103, wherein:

    said first scaffolding pattern comprises a first series of undulations having a first frequency and oriented circumferentially about said stent assembly;

    said second scaffolding pattern comprises a second series of undulations having a second frequency and oriented circumferentially about said stent assembly;

    said third scaffolding pattern comprises a third series of undulations having a third frequency and oriented circumferentially about said stent assembly; and

    wherein said first frequency is greater than said third frequency.

105. (New) A stent assembly comprising:

    a stent having a length and having a first end portion, a second end portion and a central portion disposed between said first and second end portions with said first end portion, said second end portion and said central portion defining a longitudinal axis along the length of said stent;

    said stent made of a non-superelastic, non-shape memory metal alloy;

    said stent having a radially collapsed condition with a collapsed diameter, for delivery to a location within a lumen, said collapsed diameter being plastically deformed from an initial condition having an initial diameter;

wherein at said location said stent is expanded by the application of force from said collapsed diameter to a radially expanded diameter that is greater than the collapsed diameter; and

wherein said initial diameter has a value that is closer to said expanded diameter than to said collapsed diameter.